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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,715	09/19/2000	Fumio Uehara	1232-4421US1	1475

7590

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EXAMINER

CHEN, KIN CHAN

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/664,715

Applicant(s)

UEHARA ET AL

Examiner

Kin-Chan Chen

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 28-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-39 is/are allowed.
- 6) ☒ Claim(s) 40 and 41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

### DETAILED ACTION

1. Applicant's responses (Paper No. 13, page 3) are deemed persuasive to overcome the previous 35 U.S.C.102 (e) rejections.

#### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 40 and 41 are **new added claims** (Paper 11, filed April 1, 2002). They are not non-elected claims from parent application (09/025,409) due to the restriction requirement.

Claims 40 and 41 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22 of U.S. Patent No. US 6,199,563. Although the conflicting claims are not identical, they are not patentably distinct from each other because US 6,199,563 teaches completely dipping a

substrate with porous layer into an etching solution and removing the porous layer while rotating the substrate and supplying ultrasonic waves (claim 41).

***Claim Rejections - 35 USC § 103***

3. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manos (US 5,672,212) in view of either Foell et al. (US 4,874,484; hereinafter "Foell"), Medernach (US 5,277,769) or Takeuchi (US 5,017,513).

In a method for treating semiconductor wafers (substrates), Manos teaches that a semiconductor substrate may be completely dipped into an etching solution and the surface layer may be removed with the etching solution while rotating the substrate and supplying ultrasonic waves to the substrate (abstract; col.1, lines7-10; col. 2-4).

Manos is not particular about the type of semiconductor substrate being etched in the process. Hence, it would have been obvious to one with ordinary skilled in the art to use the substrate with porous material thereon because it is one of most popular semiconductor substrate used in semiconductor device fabrication. Foell (col. 2, lines 11-15; col. 3, lines 55-56), Medernach (abstract) or Takeuchi (col. 6, lines 46-49) is relied on to show etching porous material on the semiconductor substrate with the etching solution is conventional process. Hence, it would have been obvious to one with ordinary skilled in the art to etch porous layer on the semiconductor substrate with the etching solution in the process of Manos because it is conventional and because it is disclosed by Foell, Medernach, or Takeuchi.

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The use of conventional materials to perform their known functions in a conventional process is obvious. In re Raner 134 USPQ 343.

4. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bunkenburg et al. (US 4,854,337; hereinafter "Bunkenburg") in view of Manos (US 5,672,212)

In a method for treating semiconductor wafers (substrates), Bunkenburg teaches that a semiconductor substrate may be completely dipped into an etching solution and the surface layer may be removed with the etching solution while supplying ultrasonic waves to the substrate (abstract; col.2-3).

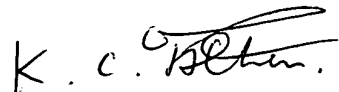
Unlike the claimed invention, Bunkenburg does not disclose that the substrate may be rotated during the etching. In a method of wafer processing, Manos teaches using a rotation mechanism in the wafer etching /cleaning system to experience a uniform cleaning or etching rate. Hence, it would have been obvious to one with ordinary skill in the art to modify Bunkenburg by using a rotation mechanism of Manos so as to experience a uniform cleaning or etching rate.

The combined prior art is not particular about the type of semiconductor substrate being etched in the process. Hence, it would have been obvious to one with ordinary skill in the art to use the substrate with porous material thereon because it is one of most popular substrate used in semiconductor device fabrication, see Foell (col. 2, lines 11-15; col. 3, lines 55-56), Medernach (abstract) or Takeuchi (col. 6, lines 46-49) as evidences.

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***Response to Arguments***

5. Applicant's response to double patenting rejection has been fully considered but they are not persuasive. As has been stated in the office action, claims 40 and 41 are **new added claims** (Paper 11, filed April 1, 2002). They are not non-elected claims from parent application (09/025,409) due to the restriction requirement.
6. Applicant's arguments with respect to claims 40 and 41 have been considered but are moot in view of the new ground(s) of 35 U.S.C. 103(a) rejection.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (703) 305-0222. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on (703) 308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2934.

  
Kin-Chan Chen  
Primary Examiner  
Art Unit 1765

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